Panasonic

PNA4601M, PNA4602M

Photodiode with amplifier functions

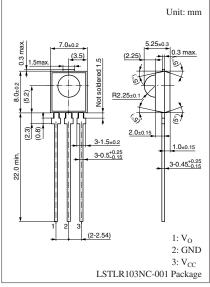
For infrared remote control systems

Features

- Extension distance is 8 m or more
- External parts not required
- Adoption of visible light cutoff resin

Absolute Maximum Ratings $T_a = 25^{\circ}C$

Parameter	Symbol	Rating	Unit
Collector supply voltage	V _{CC}	- 0.5 to +7	V
Power dissipation	P _D	200	mW
Operating ambient temperature	T _{opr}	-20 to +75	°C
Storage temperature	T _{stg}	-40 to +100	°C

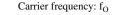


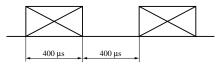
Electrical-Optical Characteristics $T_a = 25^{\circ}C \pm 3^{\circ}C$, $V_{CC} = 5.0 V$

Paramete	er	Symbol	Conditions	Min	Тур	Max	Unit
Collector supply voltag	e	V _{CC}		4.7	5.0	5.3	V
Supply current		I _{CC}	No signal condition	1.8	2.4	3.0	mA
Load resistance		R _L		15	20	25	kΩ
Maximum reception dis	stance *1	L _{max}		8.0	10.0		m
Output voltage low-leve	el *2	V _{OL}	$L \leq 8.0~m,~I_{OL}$ = 400 μA		0.35	0.50	V
Output voltage high-level		V _{OH}	No signal condition, $I_{OH} = -10 \ \mu A$	4.75	4.80		V
Pulse width	PNA4601M	T _{WL1}	L = 8.0 m, 16 pulse	200	400	600	μs
low-level *1		T _{WL2}	$L = 0.2 \text{ m}, 16 \text{ pulse}, T_a = 65^{\circ}C \pm 3^{\circ}C$	100		700	
	PNA4602M	T _{WL}	L = 0.1 m to 8.0 m, 16 pulse	200	400	600	
Pulse width	PNA4601M	T _{WH}	L = 8.0 m, 16 pulse	200	400	600	μs
high-level *1	PNA4602M	1	L = 0.1 m to 8.0 m, 16 pulse	200	400	600	
Center frequency	PNA4601M	f _O			36.7		kHz
	PNA4602M				38.0		

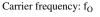
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7031 measuring methods for diodes.

- 2. *1: Burst wave form Figure 1
 - *2: Constant wave form Figure 2









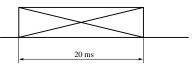
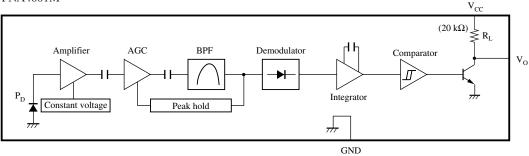


Figure 2

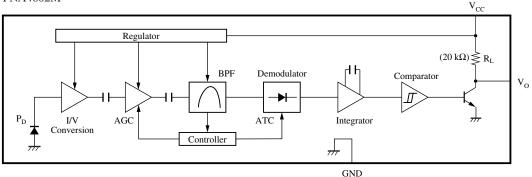
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Block Diagram

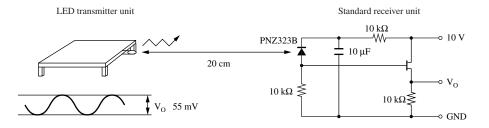




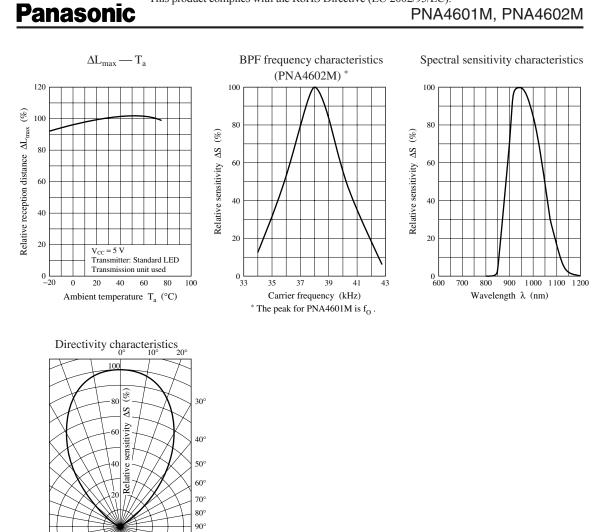
PNA4602M



Panasonic Transmitter Specifications



- 1. The output of the LED transmitter unit is adjusted so that the output standard receiver unit, V_0 may be 55 mV when transmitting waves (duty = 50%) are output from the transmitter unit, where the sensitivity to infrared emitters (S_{IR}) of PNZ323B is 0.53 μ A when the irradiance H is 12.45 μ W/cm².
- 2. The maximum detection distance of this specification is guaranteed by T_{WH} and T_{WL1} being within the limits when constant 16 pulses are transmitted with the output of the transmitter unit corresponded to the maximum detection distance in the system above. (The maximum detection distance is measured in the darkness without disturbing noises.)



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